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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,472	SAFFRE, FABRICE TP	
	Examiner	Art Unit	
	SULAIMAN NOORISTANY	2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-10,12,14-17,19-21,23,24,26,27 and 34-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-6, 8-10, 12, 14-17, 19-21, 23-24, 26-27, 34-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Detailed Action

This Office Action is response to the application (10/530472) filed on 7/12/2010.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114. including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 7 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/18/08 has been entered.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-6, 8-10, 12, 14-17, 19-21, 23-24, 26-27, 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gregerson.** US Patent No. **US 5,699,351** further in view of in view of **O'Toole.** US Patent No. **US 7,117,273**.

Regarding claim 1, Gregerson teaches wherein in a physical network of nodes, the network comprising comprises:

a plurality of nodes **(Fig. 12, e.g., N1-N4);**

a plurality of connections between said nodes **(Fig. 12, e.g., Kernels N1-N4);**

wherein each node is adapted to join the network by applying network connection rules **(e.g., Figs. 14, – col. 2, lines 50-54**) which:

(a) maintain a primary connection between the network element **(e.g., Fig. 14, unit 71 and 74 "Kernels")** and another network element in said network **(e.g., Fig. 14, unit 71 and 73 "Kernels")**, said other network element being at a lowered hierarchical level in a hierarchy of nodes in said network **(e.g., a kernel at level n is termed to be a child of its parent kernel at level n+1 provided that two kernels have the same name above level n – Col. 7, lines 41-44)**,

wherein, the hierarchy of nodes in said network forms a structure interconnecting **(e.g., PLN 33 is a hierarchical structure– col. 6, lines 66-67**) said at least one central node **(e.g., Area Manager mode "here same as central node" col. 7, lines 26-30)** and a plurality of peripheral nodes **(Fig. 4, kernels "e.g., the kernels that have normal privileges are configured at MinLevel and are not managers" – col. 7, lines 37-46),** the hierarchical structure being configured to consider a newly joining **(e.g., new resources join (or rejoin) the network – col. 3, lines 13-15; Fig. 17)** such that a node to be at a higher level than a parent node to which it connects when joining the network **(FIG. 12, kernels N3 and N4 (represented by circles 63 and 64, respectively) are the child of kernel N2 "here N2 is same as parent node" (represented by circle 61). Kernel N2 is in turn the child of kernel N1 "here N1 is same as central and higher level than a parent node" (represented by circle 62))**

(b) maintain a specified number N of further connections between a said node and other nodes in the network **(A kernel at level n is termed to be a child of its parent kernel at level n+1 provided that two kernels have the same name above level n – Col. 7, lines 41-44; (e.g., Fig. 14, unit 71-74);** and

(c) cause the said node, upon receipt of a request from an additional node desiring to form its primary connection with the said node **(e.g., Fig. 18, step 609 - the originating node sends an add resource request to its parent Area Manager);**

select one of the specified number of further connections which is not a primary connection with one of said other nodes **(e.g., Fig. 9, If kernel N7's credentials are higher '*select one of the connection*', kernel N5 abandons Role Call and kernel N7 assumes kernel N4's vacant managerial role at the end of the timeout period lines 38-65; e.g., Fig. 18, step 615-616)**; and

re-allocate that selected further connection from the other node to the additional node to form the primary connection for the said additional node **(e.g., a recovery mechanism (block 800) is employed to recreate the persistent find cache at the new Area Manager that takes over the disconnected manager's responsibilities – Fig 17, step 800; Fig. 9)**,

wherein the above network connection rules impose constraints permitting for maximum number of connections wherein each plurality of peripheral node in the network has at least the same number of connections as the said at least one central node **(e.g., Fig. 14, unit 71-74 "each Kernels has symmetrical connections number with each nodes")**;

wherein the above connection rules constrain the network topology as it grows to a desired size by cross-allocating links (e.g., Fig. 9) within each level of the network hierarchy until they are needed to provide an access point for new nodes **(e.g., FIG. 9, 17-18 'depicts an example of the Role Call procedure' – col. 9, lines 38-65)**; and

wherein each node in the network has the same number of first neighboring nodes **(e.g., Fig. 14, unit 71-74 "each Kernels has symmetrical connections number")**;

However, Gregerson does not teach wherein 'in the event that one of the N connections of the node is unallocated'

O'Toole teaches that it is well known to have in the event that one of the N connections of the node is unallocated **(e.g., Fig. 6, unit 48 'terminated relationship')** in order to make the system more efficient when changes in relationships propagate upward through the network of nodes so that each node maintains a map of the relationships among the descendants of that node.

Thus, it would have been obvious to one ordinary skill in the art to modify Gregerson's invention by utilizing a technique for maintaining a map of node relationships for a network of nodes (e.g., network of computers). In one example, the map of node relationships represents relationships overlaying and typically different from the network of physical connections among the nodes. Each child node periodically checks in with its parent nodes, and the parent nodes can thus determine when a child node has terminated a relationship with the parent or created a new relationship with a new parent. Changes in relationships propagate upward through the

network of nodes so that each node maintains a map of the relationships among the descendants of that node. A root node receives the propagated change relationship information and maintains a map of the entire network and valid pathways through the network, as taught by O'Toole.

Regarding claim 3, Gregerson and O'Toole together taught the method of a network as in claim 1 above. Gregerson further teaches wherein to attempt to maintain the specified number of k-1 further connections between the node and other nodes in the network by periodically carrying out:

for each unallocated one of the k-1 connections, selecting a node from one or more candidate nodes, and forming a connection with the selected node **(A kernel enters the network by running the Login process to locate its parent kernel, Col. 7, Lines 56-67)**,

O'Toole further teaches wherein until either the k-1 further connections have been successfully completed or there are no more candidate nodes **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Regarding claim 4 Gregerson and O'Toole together taught the method of a network as in claim 1 above. Gregerson further teaches wherein the step of selecting the peer node comprises selecting the peer node at random from the one or more candidate nodes

(The present invention is a dynamic, Symmetrical, distributed, real-time, peer-to-peer system comprised of an arbitrary "here is same as random" number of identical, Col. 2, Lines 46-53).

O'Toole further teaches **(nodes are chosen at random – Col. 31, lines 26-27).**

Regarding claim 5, Gregerson and O'Toole together taught the method of a network as in claim 1 above. Gregerson further teaches wherein the step of selecting the node comprises selecting the node on the basis of the range of the candidate nodes to the node **(The configuration parameter MaxStatus imposes a ceiling on the highest level of which the kernel can be a manager. A kernel at level n is termed to be a child of its parent kernel at level n+l -- Col. 7, Lines 39-44).**

Regarding claim 6, Gregerson and O'Toole together taught the method of a network as in claim 1 above. Gregerson further teaches wherein the network comprises an overlay network formed over an underlying network of nodes **(Fig. 14, underlying mix of physical topologies -- Col. 2, Lines 59-60)**, and wherein the range between a candidate node and the node comprises the number of links between them in the underlying network **(A kernel at level n is termed to be a child of its parent kernel at level n+l provided that the two kernels have the same name above level n -- Col. 7, Lines 39-44).**

Regarding claim 8, Gregerson and O'Toole together taught the method of a network as in claim 1 above. O'Toole further teaches wherein to identify another node as a prospective parent node on the basis of the range of the other node to the node **(Fig. 1, unit 33 – sample map – col. 8, lines 26-27).**

Regarding claim 9, Gregerson and O'Toole together taught the method of a network as in claim 1 above. O'Toole further teaches wherein to identify another node as a prospective parent node if it is within a specified range of the node **(Fig. 1, unit 33 – sample map – col. 8, lines 26-27).**

Regarding claim 10, Gregerson and O'Toole together taught the method of a network as in claim 1 above. Gregerson further teaches wherein in the event that the primary connection fails **(PLN employs a system of "heartbeat" messages, which is used to monitor the status of nodes within the network and identify network failures, Col. 6, Lines 22-24).**

O'Toole further teaches wherein in the event that the primary connection fails to re-establish a primary connection with another node which is at a lower level in the network hierarchy than the node **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Claim 12 list all the same elements of **claim 1**, but in storage system rather than method form. Therefore, the supporting rationale of the rejection to **claim 1** applies equally as well to **claim 12**.

Regarding claim 14, Gregerson and O'Toole together taught the method of a network as in claim 12 above. Gregerson further teaches wherein to attempt to maintain the specified number of k-1 further connections between the node and other nodes in the network by periodically carrying out:

for each unallocated one of the k-1 connections, selecting a node from one or more candidate nodes, and forming a connection with the selected node **(A kernel enters the network by running the Login process to locate its parent kernel, Col. 7, Lines 56-67)**,

O'Toole further teaches wherein until either the k-1 further connections have been successfully completed or there are no more candidate nodes **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Regarding claim 15, Gregerson and O'Toole together taught the method of a network as in claim 12 above. Gregerson further teaches wherein the step of selecting the peer node comprises selecting the peer node at random from the one or more candidate nodes **(The present invention is a dynamic, Symmetrical, distributed, real-time,**

peer-to-peer system comprised of an arbitrary “here is same as random” number of identical, Col. 2, Lines 46-53).

O’Toole further teaches **(nodes are chosen at random – Col. 31, lines 26-27).**

Regarding claim16, Gregerson and O’Toole together taught the method of a network as in claim 12 above. Gregerson further teaches wherein the step of selecting the node comprises selecting the node on the basis of the range of the candidate nodes to the node **(The configuration parameter MaxStatus imposes a ceiling on the highest level of which the kernel can be a manager. A kernel at level n is termed to be a child of its parent kernel at level n+l -- Col. 7, Lines 39-44).**

Regarding claim17, Gregerson and O’Toole together taught the method of a network as in claims 12 above. Gregerson further teaches wherein the network comprises an overlay network formed over an underlying network of nodes **(Fig. 14, underlying mix of physical topologies -- Col. 2, Lines 59-60)**, and wherein the range between a candidate node and the node comprises the number of links between them in the underlying network **(A kernel at level n is termed to be a child of its parent kernel at level n+l provided that the two kernels have the same name above level n -- Col. 7, Lines 39-44).**

Regarding claim 19, Gregerson and O’Toole together taught the method of a network as in claims 12, above. O’Toole further teaches wherein to identify another node as a

prospective parent node on the basis of the range of the other node to the node **(Fig. 1, unit 33 – sample map – col. 8, lines 26-27).**

Regarding claim 20, Gregerson and O'Toole together taught the method of a network as in claim 12 above. O'Toole further teaches wherein to identify another node as a prospective parent node if it is within a specified range of the node **(Fig. 1, unit 33 – sample map – col. 8, lines 26-27).**

Regarding claim 21, Gregerson and O'Toole together taught the method of a network as in claim 12 above. Gregerson further teaches wherein in the event that the primary connection fails **(PLN employs a system of "heartbeat" messages, which is used to monitor the status of nodes within the network and identify network failures, Col. 6, Lines 22-24).**

O'Toole further teaches wherein in the event that the primary connection fails to re-establish a primary connection with another node which is at a lower level in the network hierarchy than the node **(FIG. 2 illustrates an example of relationships among nodes in a network, including a creation signal and a termination signal generated by nodes configured to operate in accordance with embodiments of the invention – col. 6, lines 30-33).**

Regarding claim 23, Gregerson and O'Toole together taught the method of a network as in claim 12 above. O'Toole further teaches wherein a tangible data store containing a

computer program comprising instructions for causing one or more processors to operate as the node when the instructions are executed by the processor or processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claim 24, Gregerson and O'Toole together taught the method of a network as in claim 12 above. O'Toole further teaches wherein a storage medium carrying computer readable code representing instructions for causing one or more processors to operate as the node when the instructions are executed by the processor or processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claim 26, Gregerson and O'Toole together taught the method of a network as in claim12 above. O'Toole further teaches wherein a tangible data store containing a computer program comprising instructions for causing one or more processors to operate as the node when the instructions are executed by the processor or processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claim 27, Gregerson and O'Toole together taught the method of a network as in claim 12 above. O'Toole further teaches wherein a storage medium carrying computer readable code representing instructions for causing one or more processors to operate as the node when the instructions are executed by the processor or processors **(Fig. 1, unit 33 – 24 NODE D – col. 8, lines 15-30).**

Regarding claim 34, Gregerson and O'Toole together taught the method of a network as in claim 12 above. Gregerson further teaches a parent node identifier arranged to identify a parent node at a lowest level in the network **(Fig. 12 – e.g., Messages d.sub.1 through d.sub.3 represent heartbeat messages from child to parent, while messages e.sub.1 through e.sub.3 represent heartbeat acknowledgements from parent to child "here is same as to identify a parent node" – col. 10, lines 41-52)** that is able to maintain secondary connections to other nodes in the network of the same lowest level **(FIG. 12, kernels N3 and N4 (represented by circles 63 and 64, respectively) are the child of kernel N2 "N2 here is same as parent that has separated connections (e.g., kernels N3 is the first or primary and N4 is the second or secondary connection) at the same level" – col. 10, lines 41-52);**

a connection initiator and maintainer arranged to initiate and maintain a specified number k-1 of further connections between the node and other nodes in the network having the same level in the hierarchy as the node **(Fig. 4, A kernel at level n is termed to be a child of its parent kernel at level n+1 provided that the two kernels have the same name above level n.-- col. 7, lines 37-46; FIG. 12, kernels N3 and N4 (represented by circles 63 and 64, respectively) are the child of kernel N2 "N2 here is same as parent" (represented by circle 61). Kernel N2 is in turn the child of kernel N1 "N1 here is same as central" (represented by circle 62)), and which are advertising a spare connection (Fig. 31-33 -- Route Advertisement Process);**

wherein the node is constrained by the same connection rules as other nodes in the network to have a maximum number of k connections **(e.g., in Fig. 14**

'semantically equivalent instances, i.e., kernels, that together form a logical tree' – col. 2, lines 50-54);

if the node is a peripheral node the node has at least the same number of connections as more central nodes in the network **(Fig. 14, unit 73-74)**

O'Toole further teaches requesting one of the secondary connections of the parent node to other nodes in the network of the same level to be terminated and reallocated to the node if the identified parent node has no free links to become a primary connection between the identified parent node and the node at a lower level in the network hierarchy **(Fig. 6).**

Regarding claim 35, Gregerson and O'Toole together taught the method of a network as in claim 12 above. Gregerson further teaches joining an additional node to the network by applying said connection rule constraints to cause **(e.g., new resources join (or rejoin) the network – col. 3, lines 13-15; Fig. 17)**, for each of said at least one central node **(e.g., Area Manager mode "here same as central node" col. 7, lines 26-30)** and each of said plurality of peripheral nodes **(Fig. 4, kernels "e.g., the kernels that have normal privileges are configured at MinLevel and are not managers" – col. 7, lines 37-46)**, the maximum number of connections k permitted to be maintained **(e.g., Fig. 14)**, and each peripheral node in the network to have at least the same number of connections as said at least one central node **(e.g., Fig. 14)**, and wherein that the physical network topology after said additional node has joined the network is constrained by the same connection rules to have a maximum number of k connections

(e.g., Fig. 14), and wherein the peripheral nodes are not allowed to have fewer connections than the central nodes in the network **(e.g., Fig. 14, unit 71-74 "each Kernels has symmetrical connections number with each nodes")**,

the method further comprising said additional node:

identifying a parent node at a lowest level in the network that is to maintain secondary connections to other nodes in the network of the same lowest level **(Fig. 12 – e.g., Messages d.sub.1 through d.sub.3 represent heartbeat messages from child to parent, while messages e.sub.1 through e.sub.3 represent heartbeat acknowledgements from parent to child "here is same as to identify a parent node" – col. 10, lines 41-52);**

requesting one of the secondary connections of the parent node to other nodes in the network of the same level be terminated **(Fig. 9, 17-18 -terminating)** and re-allocated **(Fig. 9, 17-18 -rejoining)** to the node if the identified parent node has no free links to become a primary connection between the identified parent node and the node **(Fig. 31-33 -- Route Advertisement Process)**; and

initiating and maintaining a specified number k-1 of further connections between the node and other nodes in the network having the same level in the hierarchy as the node and which are advertising a spare connection **(Fig. 31-33 -- Route Advertisement Process)**, the node being constrained to have at least the same number of connections as central nodes in the network **(e.g., Fig. 14, unit 71-74 "each Kernels has symmetrical connections number with each nodes")**.

Claim 36-38 list all the same elements of **claim 1, 3-6, 8-12, 14-17, 19-27, 34-35**, but in network rather than method form. Therefore, the supporting rationale of the rejection to **claim 1, 3-6, 8-12, 14-17, 19-27, 34-35** applies equally as well to **claim 36-38**.

Response to Arguments

Applicant's arguments with respect to claim(s) 1, 3-6, 8-10, 12, 14-17, 19-21, 23-24, 26-27, 34-38 have been considered but they are not persuasive.

Applicant Argument

Instead of being directed to an individual node, most of the claims now claim a network and the cross-allocation of nodes. This clearly is not taught in any of the cited prior art.

Examiner Response:

With respect to Applicant argument, Gregerson discloses system which is a dynamic, Symmetrical, distributed, real-time, peer-to-peer system Col. 2, Lines 46-53. For example, as new resources join (or rejoin) the network, the kernel residing at each node, and thus each resource connected to that node, automatically and immediately becomes accessible to all applications using the system. The role(s) assumed by any node within the managerial hierarchy employed (e.g., area manager, domain manager, network manager, etc.) is arbitrary, i.e., any node can assume one or multiple roles within the hierarchy, and assuming one role neither requires nor precludes assumption

of any other role. Further, the roles dynamically change based on the requirements of the network, i.e., as one or more nodes enter or leave the network.

For example, FIG. 9 depicts an example of the Role Call procedure. Kernel N4, represented by circle 54, becomes isolated from the network due to physical connection problems. Kernel N7, represented by circle 47, detects the absence of kernel N4 as a result of its Monitor process (described in detail below) with its parent kernel N4. Kernel N7 goes into the forced wait period and listens for role call broadcast traffic on the network. However, assuming that kernel N7 started its Role Call first, kernel N7 sends out its broadcast message, represented by dotted line h, at the end of the role call wait period. The dotted line h is indicated here that N7 connected to other part of the network by the cross-allocation of nodes within each level of the network hierarchy. Thus, the individual kernels dynamically locate one another and negotiate the roles played by the associated nodes in managing the network hierarchy without regard to their physical location. In addition, the number of possible roles or levels that may be assumed by any node is not limited and may be selected based on the particular requirements of the networking environment – col. 3, lines 13-30. Therefore, Examiner maintains the rejection.

Applicant Argument

Neither of the art teaches the re-allocating lines to maintain a predetermined number of links between all of the nodes in a network hierarchy when a new node joins the network in the manner of the claimed invention

Examiner Response:

With respect to Applicant argument, Gregerson discloses system which is a dynamic, Symmetrical, distributed, real-time, peer-to-peer system Col. 2, Lines 46-53. For example, as new resources join (or rejoin) the network, the kernel residing at each node, and thus each resource connected to that node, automatically and immediately becomes accessible to all applications using the system. The role(s) assumed by any node within the managerial hierarchy employed (e.g., area manager, domain manager, network manager, etc.) is arbitrary, i.e., any node can assume one or multiple roles within the hierarchy, and assuming one role neither requires nor precludes assumption of any other role. Further, the roles dynamically change based on the requirements of the network, i.e., as one or more nodes enter or leave the network.

For example, in Figs. 17-18, Gregerson discloses a recovery mechanism (block 800) is employed to recreate the persistent find cache at the new Area Manager that takes over the disconnected manager's responsibilities, which is here the same as re-allocating lines to maintain a predetermined number of links between all of the nodes in a network hierarchy when a new node joins the network since Gregerson discloses a dynamic, Symmetrical, distributed, real-time, peer-to-peer system on col. 2, Lines 46-53. For example, as new resources join (or rejoin) the network, the kernel residing at each node, and thus each resource connected to that node, automatically and immediately becomes accessible to all applications using the system. Thus, the individual kernels dynamically locate one another and negotiate the roles played by the associated nodes in managing the network hierarchy without regard to their physical

location. In addition, the number of possible roles or levels that may be assumed by any node is not limited and may be selected based on the particular requirements of the networking environment – col. 3, lines 13-30.

O'Toole further discloses in Fig. 1, unit 33 "the map 31 is represented as a table (e.g., sample map 33), which is stored as a database, list, or other suitable data structure for representing the relationships among the nodes 24. In addition, the sample map 33 shows an example of a map 32 as maintained for node D, 24. The sample map 33 indicates that the node D, 24, has node A, 24, as a parent and that node D, 24, has two children node E, 24, and node G, 24. The sample map 33 also indicates that node E, 24, has node D, 24, as its parent and that node E, 24, has node F, 24, as its child. In addition, the sample map 33 shows that node F, 24, has node E, 24, as its parent and that node F, 24, does not have any child nodes. Sample map 33 also shows that node G, 24, has node D, 24, as its parent. The map maintainer 34 maintains the map 31 based on change information (e.g., change relationship signals 25) that it receives from lower level nodes in the network 20 (here is same as "*constraining a node to have a particular number of connection*). The change relationship signal 25 is a signal or message indicating a change in the relationship between nodes 24, such as the relationship 44 between node E, 24, and node F, 24. (Relationships 44 will be discussed in more detail for FIG. 2.) In one embodiment, the change relationship signal is a termination signal 49 or creation signal 52, (col. 8, lines 41-59), which is the same as "disconnect from them under certain circumstances." Therefore, Examiner maintains the rejection.

Applicant Argument

O'Toole or Gregerson, inasmuch as neither of these documents teach even in combination, the limitations presently incorporated into the claims which refer to imposing network connection rules that propagate autonomously from node-to-nose as more nodes joins the network.

Examiner Response:

With respect to Applicant argument, Gregerson discloses system which is a dynamic, Symmetrical, distributed, real-time, peer-to-peer system Col. 2, Lines 46-53. For example, as new resources join (or rejoin) the network, the kernel residing at each node, and thus each resource connected to that node, automatically and immediately becomes accessible to all applications using the system. The role(s) assumed by any node within the managerial hierarchy employed (e.g., area manager, domain manager, network manager, etc.) is arbitrary, i.e., any node can assume one or multiple roles within the hierarchy, and assuming one role neither requires nor precludes assumption of any other role. Further, the roles dynamically change based on the requirements of the network, i.e., as one or more nodes enter or leave the network. Thus, the individual kernels dynamically locate one another and negotiate the roles played by the associated nodes in managing the network hierarchy without regard to their physical location. In addition, the number of possible roles or levels that may be assumed by any node is not limited and may be selected based on the particular requirements of the

networking environment – col. 3, lines 13-30. Therefore, Examiner maintains the rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR: Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

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/KAMAL B DIVECHA/

Primary Examiner, Art Unit 2451